renovation nation

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## Green building interview, part 2

**THIS MONTH, WE CONTINUE OUR CONVERSATION WITH TYSON DOMER, PRINCIPAL OF ARTISAN DESIGN BUILD.**

***Renovation Nation: What's a General Contractor's role in green building?***

Tyson Domer: First, educate. Share information with clients, architects, subcontractors and other builders. The GC needs to keep abreast of industry developments. The green building industry is as diverse as the factors that contribute to the "green-ness" of any project. Green builders must be prepared to spend a significant amount of time researching new products and standards as well as refining new methods and techniques.

Second, I believe that good communication is the most important factor in the success of any project, green or otherwise. It is easier to introduce green elements (whether or not it is a client priority) when there is a high level of trust and interaction between all parties. Third, construction can generate an enormous volume of waste. Green builders need to be cognizant of their waste stream and manage it: reuse materials whenever possible, then store or give away what won't be immediately reused. The old axiom "one man's junk is another man's treasure" has never been more true. Recycle whatever can't be reused or pawned off on others. Save outright disposal as an option of last resort. And finally, green builders also have a responsibility to develop and support their local green supply chain and subcontractors. Think globally, source locally. I will be happy to email my collection of resources to anyone who is interested, and I hope to have everything available on the web by the end of the year.

***RN: What general observations do you have about green building from the GC perspective?***

TD: I think most clients are happy to know that they are contributing to their own health, contributing to the well being of the environment, saving money on utilities, supporting local businesses, the list goes on.

Unfortunately, there is a lack of evidence-based, peer reviewed research to support some industry claims, such as "hydronic radiant heat is more efficient than forced hot air systems." There is a lot of anecdotal information floating around, and when it comes to complex systems such as residential heating and ventilation design the 'common sense' approach is deficient, in my opinion. Builders & consumers alike are apt to rely on information from manufacturers, suppliers & subcontractors, which is biased. Thankfully, the National Association of Home Builders, HUD, and the Department of Energy are helping fill this information void.

There are many low-cost to no-cost ways to improve the construction process to achieve green. Again, it takes diligence on the part of the GC, especially since many smaller projects will not have the budget for extensive up-front design and specification work.

*It pays to nail down as many details as you can ahead of time, right down to the finish of the doorknobs.*
*- Tyson Domer*

***RN: Any final thoughts or tips for Seattle homeowners?***

TD: Plan on planning. Take time up front to plan as much of your project as you can. Dedicate as much time to the design & planning process as you feel is necessary before you start building. Construction schedules are always tight, and as the project progresses, you'll have a dizzying array of decisions to make in any event. It pays to nail down as many details as you can ahead of time, right down to the finish of the doorknobs. I'm serious.

Work with professionals that you can communicate with effectively, and that share your views as to what will make your project green. Be involved. Be assertive. Be creative.

Finally, do your own research. There is a wealth of information available. Reading this newsletter is a step in the right direction; also check out the Green Home Remodel guides.

**October 2005**
**Inside:**


City of Seattle
Gregory J. Nickels, Mayor

**Seattle Public Utilities**
Chuck Clarke, Director

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This newsletter can be made available on request to accommodate people with disabilities and those who need language translation assistance.
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## Events & educational opportunities

**Tue 10/11, 6:30-8:30 P.M.: GREEN HOME REMODEL.** Learn the basics of green remodeling at this free class. You'll find out what makes a design or product "green," tips on working with professionals, and see real Seattle case studies. At Camp Long, West Seattle. See **www.seattle.gov/sustainablebuilding** (click on *Green Home Remodel* and look under *Upcoming Events*).

**Mon 10/10, 12-1:15 P.M.: THE EFFECTS OF GLOBAL WARMING IN THE PACIFIC NORTHWEST.** Free lecture by Dr. Philip Mote, research scientist with the Climate Impacts Group at the University of Washington. The first in a series sponsored by Seattle City Light's Green Up renewable power program. At the Rainier Square Conference Center, 1301 5th Avenue, Downtown Seattle.

**Mon 10/17, 12-1:15 P.M.: BLUE LEGACY:** Observing the retreat of glaciers in Washington's national parks. Part II in the climate change series, featuring John Riedel, geologist with the National Parks Service. At the Rainier Square Conference Center, 1301 5th Avenue.

**Mon 10/24, 12-1:15 P.M.: PRACTICAL CLIMATE SOLUTIONS:** , healthier communities, stronger economies. Part III in the climate change series, with KC Golden, director of Climate Solutions and former Director of the Energy Division of the Washington Department of Community Trade and Economic Development. At the Rainier Square Conference Center, 1301 5th Avenue.

**Wed 10/26, 7-9 P.M.: THE HIDDEN LIFE OF GARBAGE**. Heather Rogers, author of *Gone Tomorrow: The Hidden Life of Garbage*, will speak about her book and screen a short movie on the subject, followed by local experts making the connection between garbage and our built environment. At the Phinney Neighborhood Center. See **www.ecobuilding.org** (click on *Calendar*) for details.

**Thurs 10/27, 7-9 P.M.: SOLAR ENERGY FOR THE HOME**. Explore various solar energy options, including passive solar, solar electric and solar hot water. It will also discuss recent solar energy incentives. $25 for Phinney Neighborhood Association members, $30 for non-members. See **www.phinneycenter.org** for details.

**10/29, 10 A.M.-4 P.M.: SOLAR HOME DESIGN**. Learn about the various approaches to harnessing the sun's energy for your benefit, basic home energy types, systems, and conservation. Receive practical design and system advice, and learn to assess the potential of your site's solar resources. See **http://experimental.asuw.org** for more.

**10/31, 12-1:15 P.M.: ADAPTING THE CITY TO THE GLOBAL WARMING SCENARIO**. With Seattle City Light Superintendent Jorge Carrasco. Part IV in the Climate Change series presented by City Light's Green Up renewable power program. At the Rainier Square Conference Center, 1301 5th Avenue.

## Green home Q&A

**Q:** *Are there any "green" plumbing options? - Ellen S.*

**A:** Copper building elements are durable and recyclable, but the production of copper is environmentally damaging, from mining to smelting. The ongoing issues with soil contamination from the old Asarco Smelter in Tacoma point to the lasting environmental and human health effects of copper production. Additionally, until the 1980s, many of the solders used to seal joints in copper pipe contained lead, creating a leaching hazard.

A relatively recent arrival on the plumbing scene is cross-linked polyethylene pipe, or PEX. PEX is a modified form of polyethylene. Using various processes, the molecules in the polyethylene are rearranged in a cross-linked pattern, increasing strength and durability while maintaining flexibility—assets in a plumbing system. However, it also renders the material unfit for recycling.

PEX's flexible nature makes installation fast and easy. Unlike copper pipe, which requires elbows and other connectors to wend its way through to fixtures, PEX can be curved and bent. Another benefit with PEX is its smaller diameter. The reduced diameter of the pipe means hot water makes it to the fixture faster. It can also be installed in a "home run" pattern, where each fixture receives a dedicated line. I haven't been able to find data on the water and energy savings related to this approach, but many plumbers that install PEX say it saves resources.

A new introduction to the US plumbing market is polypropylene pipe. Like polyethylene, polypropylene is considered one of the more benign plastics, free of chlorine, bromine, and other chemicals associated with human and environmental harm and found in other plastics like PVC. Unlike PEX, polypropylene can be recycled. However, local jurisdictions are only now beginning to permit polypropylene plumbing systems (although they've been in use in Europe for 30 years). Joints in the polypropylene pipe system are heat-fused, resulting in a system that's actually one single piece of plastic, virtually eliminating the chance of leaks.

Until polypropylene pipe becomes more widely available, PEX is likely the "greenest" plumbing option.

*Have a green remodeling question of your own? Let us do the research for you! Email questions to:* **greenhome@seattle.gov**

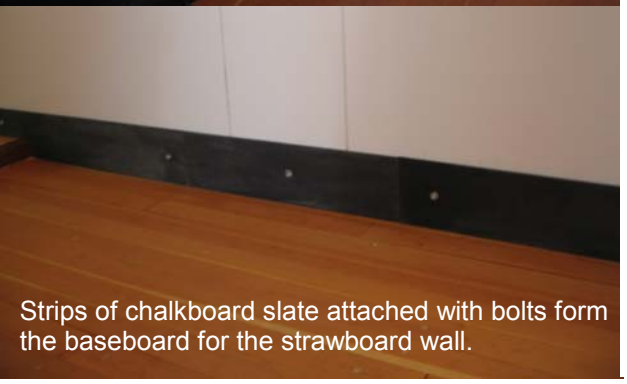
## CASE STUDY:

## Queen Anne Condo Upgrade

**OWNERS/DESIGNERS: Marty and Mackenzie Brennan**
**CONTRACTOR/DESIGNER: Owners**
**LOCATION: Queen Anne, Seattle**
**PROJECT SIZE: 750 square feet**
**PROJECT COST: $20,000 ($27 per sq. foot)**

Salvaged wood trim received a clear, matte finish of plant-based oils.

Lighting, doors, transoms, baseboard trim and cove trim are all Seattle area salvage.



Strips of chalkboard slate attached with bolts form the baseboard for the strawboard wall.

Housing options in Seattle for residents making a go of it with limited funds are dismayingly rare, and getting rarer. Yet with ingenuity and a good amount of sweat, there are still homes to be found. Marty works for The RE Store, the non-profit used building material store in Ballard. Mackenzie works for PCC, the co-op grocery. They found a 750 square foot co-op on Queen Anne that was affordable, convenient, and ready for some creative input.

**Historic Building, Historic Materials.**

The co-op building was built in 1915, and designed by Harlan Thomas, architect for the Sorrento Hotel on First Hill and the Corner Market Building in Pike Place Market. The exterior has been radically altered with an insulating stucco finish and the interior units vary from original details to extensive remodels. The Brennan's unit had undergone an 80's-era remodel that stripped its original charm so the couple felt comfortable restoring it using salvaged and eco-friendly materials.

**Location, location, location.**

Choosing a co-op was driven by their desire to maintain a car-free lifestyle and support high-density urban living, along with financial considerations. The location allows both to bicycle or bus to work and walk for their daily necessities. Multifamily living is inherently more resource-efficient than single family homes. Sharing walls and stacking units saves materials and energy while creating density that allows for the potential of more open space. The building seems to be attracting energetic new homeowners with a keen interest in environmental protection. Marty hopes to direct this energy into projects that can yield benefits to the entire building, such as rainwater harvest, solar electricity production, and other green features.

**Tight budgets spur creativity.**

Marty and Mackenzie spent about $20,000 overhauling the entire unit, including materials, hiring out labor, and new ENERGY STAR appliances—astonishingly low, considering the average kitchen remodel alone averages more than twice that amount. They achieved the tiny ticket price by doing all the design and virtually all of the construction themselves. Both Marty and Mackenzie studied architecture in college. Additionally, Marty has worked as a finish carpenter. Marty estimates that if he'd paid himself, he would have spent another $40,000 on the project. The remodel took two years' worth of free time, weekends, and evenings, along with the help of friends and relatives.

Working with salvage requires creativity, craftsmanship and attention to detail. It is also a labor of love requiring extra steps in design and application, which Marty estimates to add 20-30% to the labor factor. Flexibility was key. The owners had a general idea of how they wanted the space to look but allowed the final design to be dictated by available materials. The result is a one-of-a-kind space with a Seattle-based story embedded in every material.

**Salvage at every opportunity.**

The living and bedroom floors are fir, and original to the space. The owners removed the quarter inch-thick top nail oak flooring that had been installed over the original floor and found the fir floor was untouched from the time of installation. Nail holes from the oak veneer layer show through the refinished original flooring, but were luckily spaced in such a way that they create a decorative pattern on the "new"

floor. Such imperfections are inherent to salvaged materials, and require an appreciation of history and character. But in a hundred year old space like Marty and Mackenzie's, salvaged materials blend seamlessly.

In the kitchen, salvaged schoolhouse slate adorns the countertops, while 1960s-era cabinetry skillfully re-cut to fit the new space provides ample storage. Hammered copper café tabletops are reborn as backsplashes, subtly reflecting light and casting a warm glow. They're complemented by a ceiling sheathed in vintage standing-seam copper salvaged from a grand fireplace. The copper is slightly tapered from one side of the kitchen to the other, creating a dynamic angle and playing with the observer's sense of perspective. Where the copper leaves off, fir bleacher boards from Wenatchee High School take over. Attached to the ceiling with countersunk screws, each screw hole was painstakingly filled with a wood plug. The wide boards echo the dimensions of the copper panels, creating continuity between the two materials.

The kitchen floor is a good example of the Seattle-area history suffusing the space. Maple flooring from Madison Middle School in West Seattle coexists with gym flooring from Saint Charles High School in Tacoma, without a stitch of inter-school rivalry. Marty and Mackenzie left the Saint Charles flooring as found, court lines and all. The kitchen floor is a set of four 40-square-foot modules that act as a floating floor system: easy installation and simple to disassemble if the need arises. The difference in floor height between the modules and the living space is achieved with a small step made of dark cherry wood that contrasts with the light maple and fir flooring, signaling the change in height.

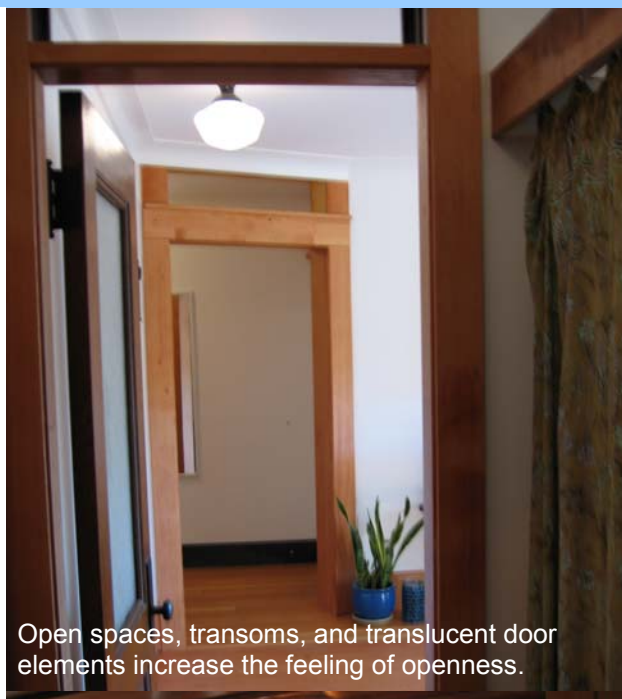
Marty and Mackenzie designed the space with the express desire of facilitating future disassembly. Bolts and other mechanical fasteners were used exclusively. Many bolts were left exposed (for example, on the school slate chalkboard baseboard trim), making for easy removal.

With the salvaged doors, care was taken to use a combination of clear and obscured glass to allow light and views to be borrowed from adjoining spaces. Transoms provide additional light as well as good ventilation between the bedroom, closet, and main living space. Keeping the wall open between the bedroom and living room helps the ceiling in each space read as a single plane, making the space feel larger than its square footage.

**New materials chosen for environmental performance.**

When new materials were used, care was taken to identify the most environmentally responsible options. Panels of strawboard (a particleboard alternative made from stems of grain-producing plants) from the Environmental Home Center adorn the walls. The panels were finished with Best Paint, a low toxic product manufactured in Seattle's Ballard neighborhood. Floors, trim, and other wood surfaces received a coat of OSMO Hardwax, a clear finish made from plant-derived oils.

Marty's opinion of housing is compellingly straightforward: "Your home should be like a good piece of clothing: the right size, well fitting, able to be mended, and, in an ideal world, so efficient that your body heat can supply the needed warmth." While the last element is an ideal still in the works, Mackenzie and Marty have fulfilled the spirit of this sentiment. The space fits them perfectly: financially, personally, and ecologically.



Open spaces, transoms, and translucent door elements increase the feeling of openness.

High-efficiency appliances are paired with vintage slate, 1960s cabinetry, and a used sink.

Vintage fireplace sheathing gets new life as ceiling panels in the kitchen.

*For further information on this project:*

*> Marty Brennan: truthwonder@yahoo.com*